DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-013216
Date Inspected: 22-Apr-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: Tom Pasqualone, Steve McConnell, William Daquinag **CWI Present:** ☑ Yes ☐ No

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG 2W/3W-A, 3W/4W-A,1W/2W-E

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 2E/3E-E2, 2W/3W-A, 1W/2W-E, 3W/4W-A and the following observations were made:

2E/3E-E2

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welders Rory Hogan and Jeremy Doleman setting up the flux cored arc welding (FCAW) machine at the above identified weld joint. The QA Inspector was informed by the QC Inspector Jim Cunningham the back gouge was previously accepted by the SE QC. The QA Inspector performed a random visual and dimensional inspection of the back gouged joint and noted it appeared to meet the general requirements of the contract documents. The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector observed the ABF welder to be utilizing a semi automated FCAW track system for welding the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as Jim Cunningham set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 225 Amps, 23.8 Volts and a travel speed of 150mm/min. The QA Inspector randomly observed the ABF welder Jeremy Doleman begin the FCAW fill pass, once the semi automated track system reached a certain point the ABF welder Rory Hogan would observe the welding arc for the remainder of the weld. The QA Inspector noted the ABF welders did complete the weld segment E2 on the QA Inspectors shift.

2W/3W-A

Upon the arrival of the QA Inspector, it was observed 7 total ultrasonic testing (UT) rejections had been located and indicated by the SE QC Inspector Steve McConnell. The QA Inspector noted approximately 3 had been repaired by welding. The QA Inspector noted to SE QC was performed on the QA Inspectors shift. The QA Inspector randomly observed and noted the rejected areas of weld had been indicated with a distinguishing marking directly on the weld. The QA Inspector randomly observed the ABF welder identified as Mitch Sittinger was setting up to begin excavating the previously rejected areas of weld. The QA Inspector randomly observed the ABF welder excavate and repair 3 total rejected area on the QA Inspectors shift (listed below).

A1

The QA Inspector randomly observed the ABF welder begin excavating the UT rejection in A1. The QA Inspector randomly observed the excavation was being performed with a burr bit grinder. After the exaction was complete the QA Inspector randomly observed the SE QC Inspector Steve McConnell perform magnetic particle testing (MT) of the excavation prior to the repair welding. The QA Inspector noted no relevant indications where located at the time of the testing. The QA Inspector randomly observed the QC Inspector perform the MT and the QA Inspector concurred, no relevant indications appeared to be present at the time of the testing. The QA Inspector noted the excavation was ground to a weldable profile prior to the repair welding. The QA Inspector performed dimensional measurements of the excavation and noted it appeared to be 140mm x 30mm x 14mm The QA Inspector observed the Y location to be 3040mm-3190mm. The QA Inspector observed an ABF apprentice welder, preheat the isolated area to be welded to the minimum required preheat of 150°F. After the minimum required preheat was achieved, the QA Inspector randomly observed the ABF welder begin the weld repair utilizing the shielded metal arc welding (SMAW) process. The QA Inspector randomly observed the ABF welder utilizing 5/32” E7018 low hydrogen electrodes with 155 Amps. The QA Inspector noted the SMAW parameters and minimum required preheat appeared to be in general compliance with ABF-WPS-D1.5-1000-repair. After the above identified repair was completed, the QA Inspector randomly observed the ABF welder move to the next UT reject and begin excavating the indicated area utilizing the same method identified above. After the excavation was completed the QA Inspector randomly observed the QC Inspector perform MT in the same manner performed in the above identified repair. The QA Inspector noted no relevant indications were located at the time of the testing. The QA Inspector performed dimensional measurements of the excavation and noted it appeared to be 95mm x 30mm x 14mm the QA Inspector noted the Y location was 4365mm-4460mm. The QA Inspector noted the same welding process and welding parameters were utilized for the above identified weld repair. The QA Inspector noted one additional repair was excavated and the repair welding started on the QA Inspector shift. The QA Inspector noted the rejected areas were excavated in the same manner described above. The QA Inspector randomly observed the excavated area of third repair to be 230mm x 30mm x 14mm and a Y location in A4 2885mm-3115mm. The QA Inspector noted the ABF welder was performing the SMAW repair for the remainder of the shift.

1W/2W-E2

The QA Inspector randomly observed the ABF welders Song Toa Huang and Huang Jin Quan setting up the FCAW semi automated machine at the above identified weld joint. The QA Inspector was asked by the SE QC Lead Inspector Leonard Cross to perform the fit inspection along side the SE QC Inspector Tom Pasqualone. The QA Inspector and the QC Inspector performed the fit up inspection including dimensional verification of the planar misalignment. It was observed by both Inspectors a portion the E2 weld segment appeared to be 1mm out of tolerance for planar misalignment between 2994mm-3280mm. The QA Inspector observed the SE QC Inspector

inform the ABF welding representative Dan Ieraci of the misalignment issue. Mr. Ieraci informed the QC and the QA Inspector ABF would attempt to correct the misalignment issue. The QA Inspector randomly observed Mr. Ieraci install two temporary fitting aids at the location of the misalignment and drive pins to correct the off set members. After the additional fit up was completed, the QA Inspector and the QC Inspector noted the weld joint appeared to be within the dimensional tolerance of AWS D1.5 section 3.3.3 The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector observed the ABF welder to be utilizing a semi automated FCAW track system for welding the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as Tom Pasqualone set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 254 Amps, 24.1 Volts and a travel speed of 250mm/min. The QA Inspector randomly observed the ABF welder Song Toa Huang begin the FCAW fill pass, once the semi automated track system reached a certain point the ABF welder Huang Jin Quan would observe the welding arc for the remainder of the weld. The QA Inspector noted the ABF welders did not complete the weld segment E2 on the QA Inspectors shift.

3W/4W-A

The QA Inspector randomly observed the SE QC Inspector Jesse Cayabayab perform dimensional verification of the above identified weld joint prior to welding. The QA Inspector noted the dimensional inspection included indicating the areas of the weld joint with planar misalignment and the gaps at the steel backing and the bevel that exceeded 2mm. After the QC Inspector had completed the dimensional inspection, the QA Inspector observed the ABF welding personnel including Dan Ieraci begin performing additional fit up tasks to correct the areas of the weld joint the did not meet the tolerances of AWS D1.5 section 3.3.3 and 3.13.5. The QA Inspector randomly observed an ABF representative under the top deck plate utilizing a porta power hydraulic jack to push the steel backing flush with the top deck plate in the areas previously indicated by the QC Inspector to have excessive gaps. After an area was corrected with the porta power jack, the ABF welder Jordan Hazelaar performed SMAW tack weld to secure the steel backing to the bevel. The QA Inspector noted the above identified process was repeated at each location where the steel backing gap exceeded 2mm. In addition the ABF welder Salvador Sandoval began installing fitting aids at the locations indicated by the QC Inspector where the planar misalignment exceed that allowed by AWS D1.5-02 section 3.3.3. The QA Inspector noted the fit up tasks were performed for the duration of the QA Inspectors shift.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer